

Claims

- [c1] An apparatus for compressing video comprising:
an encoder further comprising means for producing a drift-aware bitstream and
means for prioritizing transport of the drift-aware bitstream, wherein a
corresponding decoder can utilize the drift-aware bitstream to manage drift
while decoding the compressed video.
- [c2] The apparatus of claim 1 wherein the encoder further comprises means for
introducing drift incrementally.
- [c3] The apparatus of claim 1 wherein the encoder further comprises means for
measuring the drift potentially being introduced.
- [c4] The apparatus of claim 1 wherein the encoder further comprises means for
encoding options in the drift-aware bitstream that permit drift while
simultaneously controlling the amount of drift.
- [c5] The apparatus of claim 1 wherein the encoder further comprises means for
reducing or eliminating drift.
- [c6] The apparatus of claim 1 wherein the encoder further comprises means for
optimizing expected quality for the drift-aware bitstream across receivers.
- [c7] The apparatus of claim 1 wherein the apparatus is a computer-readable
medium.
- [c8] An apparatus for encoding compressed video comprising:
an input for receiving uncompressed video;
a first output for transmitting a base layer of the compressed video;
a second output for transmitting an enhancement layer of the compressed
video; and
an encoder capable of receiving video bits from the input, encoding the video in
a base layer and an enhancement layer, and sending the base layer to the first
output and the enhancement layer to the second output; and
a drift controller connected to the encoder which manages drift introduced into
the base layer of the compressed video.

- [c9] The apparatus of claim 8 wherein the drift controller selects an amount of drift by including control information in the compressed video.
- [c10] The apparatus of claim 9 wherein the control information comprises an error prediction strategy.
- [c11] The apparatus of claim 9 wherein the control information comprises adjustments to quantization.
- [c12] The apparatus of claim 8 wherein the encoder further comprises:
a coarse frame memory that depends only on the base layer;
a fine frame memory that depends on the enhancement layer and the base layer, wherein the coarse frame memory and the fine frame memory provide predictions to the drift controller.
- [c13] The apparatus of claim 8 further comprising a third output for transmitting a second enhancement layer of the compressed video, wherein the encoder and the drift controller do not allow errors from the second enhancement layer to propagate to the base layer.
- [c14] The apparatus of claim 8 wherein the apparatus is a computer-readable medium.
- [c15] An apparatus for decoding a compressed video stream comprising:
a first error predictor capable of predicting error depending on base layer information in the compressed video stream;
a second error predictor capable of predicting error depending on the base layer information and enhancement layer information in the compressed video stream; and
a drift compensator capable of combining error predictions from the first and second error predictors in accordance with a drift management option included in the compressed video stream.
- [c16] The apparatus of claim 15 wherein the first and second error predictors comprise a coarse and a fine motion-compensated frame memory respectively.
- [c17] The apparatus of claim 15 wherein the drift management option specifies a

combination of error predictions which reduces drift.

[c18] The apparatus of claim 15 wherein the drift management option specifies a combination of error predictions which eliminates drift.

[c19] The apparatus of claim 15 wherein the drift management option specifies a combination of error predictions which allows drift.

[c20] The apparatus of claim 15 wherein the apparatus is a computer-readable medium.

[c21] A method of encoding a compressed video stream comprising:
receiving an uncompressed video stream;
encoding the uncompressed video stream as a drift-aware bitstream; and
prioritizing the transport of the drift-aware bitstream.

[c22] The method of claim 21 wherein the drift-aware bitstream includes control information for managing drift in the drift-aware bitstream.

[c23] The method of claim 22 wherein the control information comprises an error prediction strategy.

[c24] The method of claim 22 wherein the control information comprises adjustments to quantization.

[c25] A method of decoding a compressed video stream comprising:
receiving a first error prediction depending on base layer information;
receiving a second error prediction depending on base layer information and enhancement layer information; and
combining the first and second error predictions according to macroblock type information, resulting in a prediction that is applied to the video stream.

[c26] The method of claim 25 wherein the first and second error predictions are received from a coarse and a fine motion-compensated frame memory respectively.

[c27] The method of claim 25 wherein combining the first and second error predictions reduces drift, in accordance with an option in the macroblock type

information.

[c28] The method of claim 25 wherein combining the first and second error predictions eliminates drift, in accordance with an option in the macroblock type information.

[c29] The method of claim 25 wherein combining the first and second error predictions allows drift, in accordance with an option in the macroblock type information.

09683122